

Listing of the Claims:

1. (Previously Presented) A device for detecting particles on a windshield of a motor vehicle with a radiation source which emits optical rays onto the windshield with a photodetector which receives a portion of the rays emitted onto the windshield, and with a single control unit, which manages the radiation source and analyzes the rays received by the photodetector characterized in that the radiation source is positioned outside the field of vision of a driver of the vehicle and is aligned in such a way that the light rays from the radiation source strike the windshield in the area of the field of vision, and that the photodetector is pointed at the area of the windshield which the optical rays from the radiation source strike and wherein the single control unit is operable to selectively control at least one of an intensity, duration and frequency of a first ray emitted by the radiation source and is operable to analyze the first ray for detecting the presence of particles on the windshield of the motor vehicle and for identifying a type of the particles when at least a portion of the first ray is received by the photodetector based, at least in part, on the at least one of the previously controlled intensity, duration and frequency of the first ray.

2. (Previously Presented) The device in accordance with claim 1, wherein the radiation source is formed as a light-emitting-diode.

3. (Previously Presented) The device in accordance with claim 1, wherein the photodetector includes several receiving units.

4. (Previously Presented) The device in accordance with claim 3, wherein the receiving units are formed as optoelectronic arrays.

5. (Previously Presented) The device in accordance with claim 3, wherein means are located in the direction of propagation of the beams reflected from the particles in front of the receiving units for focusing the beams.

6. (Previously Presented) The device in accordance with claim 5, wherein the means for focusing the beams are formed as lenses.

7. (Previously Presented) The device in accordance with claim 1, wherein the radiation source emits optical rays with a wavelength of about 350 nm to 800 nm.

8. (Previously Presented) The device in accordance with claim 1, wherein the radiation source emits optical rays with a wavelength in the infrared range.

9. (Cancelled)

10. (Cancelled)

11. (Previously Presented) The device in accordance with claim 1, wherein the device is an integral part of an interior light module in the vehicle.

12. (Previously Presented) The device in accordance with claim 1, wherein the device is an integral part of a rearview mirror module in the vehicle.

13. (Previously Presented) The device in accordance with claim 1, wherein the device is connected over a bidirectional data bus to a superordinate control unit in the vehicle.

14. (Previously Presented) The device of claim 1 wherein the control unit is operably associated with a windshield cleaning system of the vehicle such that the windshield cleaning system is activated when the control unit detects dirt on the windshield.

15. (Previously Presented) The device of claim 1 wherein the photodetector further comprises:
a CCD image converter.

16. (Previously Presented) The device of claim 2 wherein the light emitting diode is operable to emit optical rays having different wavelengths.

17. (Previously Presented) The device of claim 2 wherein the light emitting diode is operable to emit optical rays having different intensities.

18. (Previously Presented) The device of claim 2 wherein the light emitting diode is positioned such that the optical rays strike the windshield at a similar angle with respect to a driver's line of sight.

19. (Currently Amended) A device for detecting particles on a windshield of a motor vehicle, comprising:

a radiation source that emits optical rays onto the windshield, the radiation source positioned spaced from the windshield to a location outside a field of vision of a driver of the vehicle and aligned in such a way that optical rays from the radiation source strike the windshield in an area of the field of vision;

a beam receiver that receives reflections of at least a portion of the rays emitted onto the windshield, the beam receiver spaced from the windshield to a location outside the field of vision of the driver and pointed at the area of the windshield struck by the optical rays from the radiation source; and

a control unit that selectively controls at least one of an intensity, a duration and a frequency of a first ray emitted by the radiation source and is operable to analyze the reflections of the first ray and to identify a type of the particles based upon the at least one of the intensity, the duration and the frequency of the first ray and characteristic reflections of known particles.

20. (Previously Presented) The device of claim 19 wherein the radiation source is a light emitting diode.

21. (Cancelled).

22. (Previously Presented) The device of claim 19 wherein the radiation source, the beam receiver and the control unit are mounted with an interior light module in the vehicle.

23. (New) A device for detecting particles on a windshield of a motor vehicle comprising:

radiation source means located at a position spaced from the windshield for emitting optical rays onto the windshield, the radiation source means positioned outside a field of vision of a driver of the motor vehicle and aligned in such a way that optical rays from the radiation source means strike the windshield in an area corresponding to the field of vision of the driver and at an angle corresponding to a

line of vision for the driver, the radiation source means for emitting selectively variable optical rays with a wavelength of about 350 nm to 800 nm;

photodetector means located spaced from the windshield for receiving a reflected portion of the optical rays emitted onto the windshield, the photodetector pointed at the area of the windshield where the optical rays from the radiation source strike and can be reflected by particles on an interior surface and an exterior surface of the windshield, the photodetector means including a plurality of receiving units formed as optoelectronic arrays;

focusing means located in the direction of propagation of the optical rays reflected from the particles in front of the receiving units for focusing the optical rays; and

single control means for managing the radiation source means and for analyzing the reflected optical rays received by the photodetector means, the single control means operable for selectively controlling an intensity, a duration and a frequency of an optical ray emitted by the radiation source means, the single control means operable for analyzing the reflected optical ray and for detecting the presence of particles on the interior surface and the exterior surface of the windshield of the motor vehicle, the single control means for identifying a type of particles on the interior surface and the exterior surface of the windshield, when at least a portion of the reflected optical ray is received by the photodetector means, the identification of the type of particle based, at least in part, on the selectively controlled intensity, duration and frequency of the optical ray emitted by the radiation source means, wherein the control means is operably connected over a data bus to a superordinate control unit in the vehicle and associated with a windshield cleaning system of the vehicle such that the windshield cleaning system is activated when the control unit detects dirt on the windshield.